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EXAMINER	
QUAN, ELIZABETH S	

ART UNIT	PAPER NUMBER
1743	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/619,416	ERDEN ET AL.	
	Examiner	Art Unit	
	Elizabeth Quan	1743	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 November 2003*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 and 3-55* is/are pending in the application.

4a) Of the above claim(s) *31-41* is/are withdrawn from consideration.

5)☒ Claim(s) *19,20,26 and 47-50* is/are allowed.

6)☒ Claim(s) *1,3-18,21,23-25,27-30,42,43,45,46 and 51-55* is/are rejected.

7)☒ Claim(s) *22 and 44* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *19 July 2000* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ **The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.**

Priority under 35 U.S.C. §§ 119 and 120

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Election/Restrictions

1. This application contains claims directed to the following patentably distinct species of the claimed invention: Claims 1, 3-30, and 42-55 are directed to Figs. 1-8 in which the base is not sized to receive a microtiter plate but a plurality of vials and the cover is configured for sealing engagement with the base. Claims 31-37 are amended such that they are clearly directed to Fig. 12 in which a microtiter plate is received within the housing and the cover is configured for sealing engagement with the housing. Claims 31-37 originally recited: a base member having a cavity formed therein, the cavity having dimensions generally corresponding to a microtiter plate. This describes figs. 1-8. On page 14, lines 6-20 of the instant specification it states that the base in the embodiment of figs. 1-8 corresponds to the standard microtiter plate. On page 9, lines 19 and 20 through page 10, lines 1 and 2, the instant specifcation states that in the embodiment of figs. 1-8 internal surfaces of the base (32) and cover (34) defined an internal cavity which forms the pressure chamber. Now the claims have been amended to recite: a housing sized for receiving a microtiter plate. This describes fig. 12. On page 18, lines 8-10 of the instant specification it states that the pressure chamber (202) in the embodiment of fig. 12 is sized for receiving a microtiter plate (205).

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, no claim is generic.

Applicant is advised that a reply to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable

thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

2. During a telephone conversation with Cindy Kaplan on 1/30/2004 a provisional election was made with traverse to prosecute the invention of figs. 1-8, claims 1, 3-30, and 42-55. Affirmation of this election must be made by applicant in replying to this Office action. Claims 31-37 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

3. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the flow restriction device comprising a plurality of check valves must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

3. Claims 25, 49 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. Claims 25, 29 are rendered indefinite since a direct communication path between the reaction wells and pressure chamber is not possible when vials are inserted into the reaction wells.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 42, 43, 45, 46, 51, 54, 55 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,792,430 to Hamper.

Hamper discloses an apparatus for use in parallel reaction of materials (fig. 13). The apparatus comprises a base (12), cover (63), inlet port (65), and flow restriction device (33,56) (fig. 13). The base has a plurality of reaction wells (62) each of which has a closed lower end and an open upper end for receiving components of the reaction (fig. 13). The cover is sealingly engaged with the base by gaskets (64) to form a housing enclosing the plurality of reaction wells and defining a common pressure chamber in communication with the plurality of wells (fig. 13). The inlet port is in communication with the pressure chamber for supplying pressurized fluid to the chamber to pressurize the plurality of vials (col. 7, line 57-col. 8, line 20). The flow restriction device is positioned adjacent to the open ends of the reaction wells and comprises a plurality of flow passageways formed therein to provide direct fluid communication between the reaction wells and the pressure chamber while reducing cross-talk between the plurality of vials (fig. 13). The plurality of flow passageways provides the only fluid communication path between the plurality of wells and the pressure chamber (fig. 13). The flow restriction device comprises a sheet with holes through which fittings pass thereby characterizing the flow restriction device as a porous sheet (fig. 13). It appears the flow restriction device is relatively rigid since it maintains its structure even under pressure. Furthermore, the term rigid is a relative term, and everything has a certain degree of rigidity. The housing is configured to sustain a pressure substantially above atmospheric pressure (col. 7, line 57-col. 8, line 20).

7. Claims 17, 18, 21, 23-25, 42, 43, 45, 46, 51, 54, 55 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,011,779 to Maimon.

Maimon discloses an apparatus for use in parallel reaction of materials (fig. 6). The apparatus comprises a base (206), cover (201), inlet port (204), and flow restriction device (200,202,203) (fig. 6). The base has a plurality of reaction wells formed in an upper surface of the base and extending partially therethrough in which each reaction well has a closed lower end defined by the base and an open upper end for receiving components for the reaction (fig. 6). A plurality of vials (205) is inserted into the reaction wells (fig. 6). The cover sealingly engages with the base to form a housing enclosed the plurality or reaction wells and defining a common pressure chamber in communication with the plurality of reaction wells (fig. 6). The inlet port is in communication with the pressure chamber for supplying pressurized fluid to the chamber to pressurize the plurality reaction wells (col. 6, lines 29-35). The flow restriction device is positioned adjacent to the open ends of the reaction wells and comprises a plurality of flow passageways configured to provide a direct fluid communication path between one of the plurality of reaction wells and the pressure chamber while reducing cross-talk between the plurality of wells (fig. 6). The flow restriction device comprises holes through which tubes pass (fig. 6). The holes with tubes align with the reaction wells (fig. 6). The flow restriction device comprises a sheet with holes through which fittings pass thereby characterizing the flow restriction device as a porous sheet (fig. 13). It appears the flow restriction device is relatively rigid since it maintains its structure even under pressure. Furthermore, the term rigid is a relative term, and everything has a certain degree of rigidity. The flow restriction device is removably attached to the base member through the hinge (209) (fig. 6). The housing is configured to sustain a pressure substantially above atmospheric pressure.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

10. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

11. Claims 1, 3, 4, 10, 29, 52, 53 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,324,483 to Cody et al. in view of U.S. Patent No. 5,428,118 to Painter et al., "Investigation of Coolant Mixing in Pressurized Water Reactors at the Rossendorf Mixing Test Facility Rocom" to Grunwald et al., and "Runaway in Stirred Tanks" to Heiszwolf.

Referring to claims 1, 3, 4, 10, 29, 52, 53, Cody et al. disclose an apparatus for multiple, simultaneous synthesis of compounds (10) (see ABSTRACT; FIGS. 2, 4, and 5; COL. 7, lines 37-39). A base (15) with a plurality of reaction wells (16) formed in the upper surface of the base and extending partially therethrough (see FIGS. 2, 4, and 5; COL. 8, lines 23-26). Each of the reaction wells (16) has a closed lower end defined by the base (15) and an open upper end for receiving components for the reaction (see FIGS. 2, 4, and 5). A plurality of vials (11) is inserted into the wells (16) for receiving reaction components (see FIGS. 2, 4, and 5; COL. 8, lines 38-45). A cover (20) is configured for sealing engagement with the base (15) to form a housing enclosing the reaction wells (16) and defining a common pressure chamber in communication with the reaction wells (16) (see FIGS. 2, 4, and 5; COL. 9, lines 16-36; COL. 10, lines 33-37). The cover is removably attached to the base member with quick operating fastening devices (35,36) (see COL. 10, lines 13-37).

A flow restriction device (26) is positioned adjacent to the open ends of the reaction wells (16) aligning the vent holes with the wells to provide communication between the wells and pressure chamber while reducing cross-talk between the wells (see FIGS. 2, 4, and 5; COL. 9, lines 42-61). The flow restriction device (26) is removably attached to the base (15) with fastening means (35,36) (see FIGS. 2, 4, and 5; COL. 10, lines 13-37). The flow restriction device (26) may be a rigid elastomeric, solvent-resistant sheet from rubbers, such as neoprene, silicone, or VITON (see COL. 9, lines 58-61). The sheet has holes, lending it porous (see FIGS. 2, 4, and 5).

An inlet port (23) is in communication with the pressure chamber for supplying pressurized fluid to the chamber to pressurize the reaction wells (16) (see FIGS. 2, 4, and 5; COL. 9, lines 27-34). The housing is made of materials (metals) capable of sustaining a pressure substantially above atmospheric pressure as required for organic synthesis (see COL. 8, lines 29-38; COL. 9, lines 25-27 and 34-36).

Cody et al. disclose a housing from transparent material such as plexiglass. Cody et al. do not quantify internal pressures within the reactor. Painter et al. disclose a plexiglas reactor configured to withstand 10 psi to about 1000 psi (see COL. 5, lines 24-26; COL. 7, lines 40-68). Painter et al. address the issue of carrying out operations requiring elevated pressures and/or handling reactive materials at elevated pressures. However, Painter et al. do not explicitly disclose the use of transparent plexiglass; however, it is well known to use a transparent plexiglass to allow observation of reactions as evidenced by Grunwald et al. and Heiszwolf. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to make the synthesis apparatus disclosed by Cody et al. to allow operating pressures as high as 1000 psig as necessary for particular operations and reactants in view of Painter et al. and permit visual observation of reactions as evidenced in Grunwald et al. and Heiszwolf.

Cody et al. fail to disclose reaction wells formed in an upper surface of the base. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to make the reaction wells integral with the base such that the wells are formed in an upper surface of the base since it has been held that forming in one

piece an article which has formerly been formed in two pieces and put together involves only routine skill in the art (*Howard v. Detroit Stove Works*, 150 U.S. 164 (1893)).

1. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,324,483 to Cody et al. in view of U.S. Patent No. 5,428,118 to Painter et al., "Investigation of Coolant Mixing in Pressurized Water Reactors at the Rossendorf Mixing Test Facility Rocom" to Grunwald et al., and "Runaway in Stirred Tanks" to Heiszwolf as applied to claim 1 above, and further in view of U.S. Patent No. 3,617,033 to Ichikawa et al.

Referring to claim 5, Cody et al. in view of Painter, Grunwald et al., and Heiswolf do not specifically state titanium as a material for reactor construction. Ichikawa et al. disclose an experiment using a titanium pressure vessel (see COL. 8, lines 6). While Ichikawa et al. do not explicitly state why the pressure vessel is made from titanium, it appears titanium can withstand high pressures and is corrosion resistant. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to make the synthesis apparatus disclosed by Cody et al. in view of Painter, Grunwald et al., and Heiswolf from titanium for the advantages of withstanding high pressures and corrosion resistance in the event the internal reactor vessels rupture.

2. Claims 6, 7, 9, 11, 12, 16, 27, 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,324,483 to Cody et al. in view of U.S. Patent No. 5,428,118 to Painter et al., "Investigation of Coolant Mixing in Pressurized Water Reactors at the Rossendorf Mixing Test Facility Rocom" to Grunwald et al., and "Runaway in Stirred Tanks" to Heiszwolf as applied to claims 1, 17, 25, 42, and 49 above, and further in view of U.S. Patent No. 6,309,608 to Zhou et al.

Referring to claims 6 and 7, Cody et al. in view of Painter, Grunwald et al., and Heiswolf do not disclose using stainless steel and aluminum alloys for the cover of the apparatus. Zhou et al. disclose constructing the reaction block from stainless steel and aluminum alloys, which are readily machined and exhibits high thermal conductivity (see COL. 11, lines 36-46). Zhou et al. do not address the cover; however, it would have been obvious to one having ordinary skill in the art at the time the invention was made to make both the cover and base disclosed by Cody et al. in view of Painter, Grunwald et al., and Heiswolf from a single material selected from stainless steel or aluminum alloys for the advantages of ease in machining and high thermal conductivity.

Referring to claim 9, Cody et al. in view of Painter, Grunwald et al., and Heiswolf do not disclose a pressure relief valve coupled to an outlet port in communication with the pressure chamber. Zhou et al. disclose venting the reaction block through a pressure relief valve (see COL. 21, lines 37-40). Furthermore, pressure-control means are provided in the purge gas exit line to control the pressure within the reaction block to avoid pressure buildup and safety hazards (see COL. 21, lines 41-44). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include a pressure relief valve to an outlet port in communication with the pressure chamber as in Zhou et al. to the apparatus of Cody et al. in view of Painter, Grunwald et al., and Heiswolf to avoid pressure buildup and the associated hazards.

Referring to claim 11, Cody et al. in view of Painter, Grunwald et al., and Heiswolf do not explicitly disclose external dimensions of the base and cover corresponding to standard microtiter plate dimensions. Zhou et al. disclose semi-

automated or automated resin washing and reactant dispensing to selected reaction vessels within a standard microtiter plate with a footprint of 3-3/8" by 5" to enhance productivity of all phases of combinatorial synthesis (see COL. 10, lines 19-21; COL. 26, lines 20-56; COL. 27, lines 1-7). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus of Cody et al. in view of Painter, Grunwald et al., and Heiswolf to standardize the dimensions of the synthesis apparatus as in Zhou et al. to allow automation to enhance productivity.

Referring to claim 12, Cody et al. in view of Painter, Grunwald et al., and Heiswolf do not explicitly disclose 96 reaction wells arranged in an 8 by 12 array. Zhou et al. disclose transferring synthesized compounds in the first and second of a pair of 48-vessel reaction blocks to odd-numbered and even-numbered wells, respectively, to fill 96 wells (see COL. 58-64; FIG. 17A and 17B). Furthermore, it is well known in the art to use plates with 96 wells in a 12 by 8 array. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus of Cody et al. in view of Painter, Grunwald et al., and Heiswolf to use a plate with 96 wells in a 12 by 8 array as in Zhou et al. to conform to convention to allow automation.

Referring to claim 16, Cody et al. do not address the spacing of the reaction wells. Zhou et al. disclose center-to-center spacing of wells in a standard 96-well plate to be about 9 mm (see COL. 28, lines 63-67; COL. 29, lines 1-3). Additionally, it is well known in the art to have 9 mm center-to-center spacing in a 96-well plate. Therefore, it

would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus of Cody et al. in view of Painter, Grunwald et al., and Heiswolf to use 9 mm center-to-center spacing among wells as in Zhou et al. to conform standards and allow automation configured to such standards.

Referring to claim 27, Cody et al. in view of Painter, Grunwald et al., and Heiswolf do not disclose a circumferential groove formed in one of the base and cover and a gasket disposed within the groove to provide a seal between the base and cover. Zhou et al. disclose the top seal between reaction block (100) and reaction block cover plate (200) through a single cover plate seal (210) by an O-ring that runs along the perimeters of the cover plate and reaction block (see COL. 14, lines 66 and 67; COL. 15, lines 1-3; FIG. 1). An O-ring groove (240) is provided for the O-ring either in the top surface of the reaction block (100) or bottom surface of cover plate (200) (see COL. 7-12; FIG 8B). Furthermore, a recess (244) may be cut into the underside of cover plate (200). Since the top of the reaction block (100) is slightly smaller than the recessed area, the reaction block just fits into the area to help position the cover plate on the reaction block (see COL. 12-18; FIG. 8B). Therefore, it would have been obvious to one having ordinary skill in the art to modify the apparatus of Cody et al. in view of Painter, Grunwald et al., and Heiswolf include a groove in the base or cover as in Zhou et al. to fit the gasket within it to provide an effective seal and help locate the cover plate on the reaction block.

Referring to claim 28, Cody et al. in view of Painter, Grunwald et al., and Heiswolf do not disclose the base and cover each with a periphery flange configured for

mating. Zhou et al. disclose a reaction base plate (300) with a recessed area (350) to contain the sliding seal plate (400) and reaction block (100) (see COL. 17, lines 53-61; FIG. 1 and 9). A portion of the reaction base plate (300) extends beyond the sliding seal plate (400) and reaction block (100), where reaction block closure posts (320) receive fasteners through through-holes (230) on the edge of the cover plate (200) to effect a tight seal (see COL. 15, lines 27). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus of Cody et al. in view of Painter, Grunwald et al., and Heiswolf to include periphery flanges as in Zhou et al. to effect a tight seal between the base and cover.

3. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,324,483 to Cody et al. in view of U.S. Patent No. 5,428,118 to Painter et al., "Investigation of Coolant Mixing in Pressurized Water Reactors at the Rossendorf Mixing Test Facility Rocom" to Grunwald et al., and "Runaway in Stirred Tanks" to Heiszwolf as applied to claim 1 above, and further in view of U.S. Patent No. 5,529,756 to Brennan et al.

Referring to claim 8, Cody et al. in view of Painter, Grunwald et al., and Heiswolf do not disclose a quick release fitting coupled to the inlet port for connection to a pressure source. Cody et al. do disclose ports (23) on the sidewalls of the cover (20) for introducing or exhausting gas or liquid (see COL. 9, lines 27-34). It is both well known and obvious to provide a fitting for connection to the pressure source as evidenced by Brennan et al. Brennan et al. disclose an inlet tube (72) coupled to the gas inlet (70) for connecting the latter with a gas source to provide a positive pressure within the pressure chamber without introducing oxygen from the environment (see FIG. 5; COL. 46-50).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include an inlet tube as disclosed by Brennan et al. coupled to the gas inlet of the apparatus of Cody et al. in view of Painter, Grunwald et al., and Heiswolf to provide a positive pressure in the chamber without introducing oxygen from the environment.

4. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,324,483 to Cody et al. in view of U.S. Patent No. 5,428,118 to Painter et al., "Investigation of Coolant Mixing in Pressurized Water Reactors at the Rossendorf Mixing Test Facility Rocom" to Grunwald et al., and "Runaway in Stirred Tanks" to Heiszwolf and U.S. Patent No. 6,309,608 to Zhou et al. as applied to claims 1, 11, and 12 above, and further in view of U.S. Patent No. 6,171,555 to Cargill et al.

Referring to claim 13, Cody et al. in view of Painter, Grunwald et al., Heiswolf, and Zhou et al. do not quantify the internal volume of the wells. Cargill et al. disclose each reaction chamber having an internal volume of approximately 2 ml. While Cargill et al. do not explicitly state why an internal volume of approximately 2 ml is used for each reaction chamber, Examiner takes Official Notice of the fact that wells with an internal volume of approximately 2 ml is conventional in the art. Furthermore, the internal volume of the well is not a patentable limitation, as the volume can be catered to the amount of sample. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus of Cody et al. in view of Painter, Grunwald et al., Heiswolf, and Zhou et al. to create wells with an

internal volume of approximately 2 ml as disclosed by Cargill et al. due to set standards and as necessary to contain the desired amount of sample.

5. Claims 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,324,483 to Cody et al. in view of U.S. Patent No. 5,428,118 to Painter et al., "Investigation of Coolant Mixing in Pressurized Water Reactors at the Rossendorf Mixing Test Facility Rocom" to Grunwald et al., and "Runaway in Stirred Tanks" to Heiszwolf as applied to claim 1 above, and further in view of U.S. Patent No. 6,309,608 to Zhou et al., U.S. Patent No. 6,027,694 to Boulton et al., and U.S. Patent No. 6,264,891 to Heynaker et al.

Referring to claim 14, Cody et al. in view of Painter, Grunwald et al., and Heiswolf do not explicitly disclose 12 reaction wells arranged in a 3 by 4 array. Zhou et al cite reaction blocks generally have from 12 to 96 or more reaction chambers (see COL. 10, lines 16-18). Boulton et al. disclose microplates with lower density wells are available as needed for the number of assays performed (see COL. 1, lines 53-57). While Boulton et al. and Zhou et al. do not mention the configuration of the wells, Heynaker et al. leave the option of array configuration of wells open (see COL. 6, lines 57-63). Heynaker et al. do not explicitly state why different arrays are used; however, it appears that configuration may be important for automation. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus of Cody et al. in view of Painter, Grunwald et al., and Heiswolf to use 12 wells as in Zhou et al., Boulton et al., and Heynaker et al. for completing lesser than or equal to 12 reactions in a 3 by 4 array to conform to automation equipment.

Referring to claim 15, Cody et al. in view of Painter, Grunwald et al., Heiswolf, Zhou et al., Boulton et al., and Heynaker et al. do not quantify the internal volume of the wells. Applying the decision made by the Federal Circuit in Gardner v. TEC Systems, Inc., the dimensions of the well would not affect the performance of the claimed device respective to prior art device. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the internal volume of the wells as necessary to produce the desired amount of product. Therefore, the claimed device is not patentably distinct from prior art device based on the internal volume of the wells.

6. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,324,483 to Cody et al. in view of U.S. Patent No. 5,428,118 to Painter et al., "Investigation of Coolant Mixing in Pressurized Water Reactors at the Rossendorf Mixing Test Facility Rocom" to Grunwald et al., and "Runaway in Stirred Tanks" to Heiszwolf

Referring to claim 30, Cody et al. in view of Painter, Grunwald et al., and Heiswolf do not quantify the volume of the pressure chamber. The Federal Circuit decided in Gardener v. TEC System, Inc. that difference of dimensions between prior art and claims would not make the claimed device perform differently than prior art device, and the claimed device is not patentably distinct from the prior art device. Furthermore, the applicant has not stated how a pressure chamber volume of 10 cubic inches solves any problems or is for any particular purpose. It appears that the synthesis apparatus would perform equally well with any pressure chamber volume. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was

made to use different pressure chamber volumes as necessary or desired for performing assays.

Allowable Subject Matter

12. Claims 19, 20, 26, 47, 48-50 allowed.

Claims 22, 44 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

13. Applicant's arguments with respect to claims 17, 18, 21, 23-25, 42, 43, 45, 46, 51, 54, 55 have been considered but are moot in view of the new ground(s) of rejection.

14. Applicant's arguments filed 11/18/2003 have been fully considered but they are not persuasive.

15. Applicant states that Cody et al. specifies conditions for synthesis of general organic compounds, which do not include pressurization substantially above atmospheric pressure. Applicant further states that solid phase synthesis applications generally do not use a pressurized reaction gas and Cody et al. are concerned with the synthesis of small organic molecules not gas phase polymerization. Applicant further states that the importance of the explicit description in Cody et al. of the use of the apparatus for solid phase synthesis is that pressurization substantially above atmospheric pressure is not required. Applicant further states that it is clear from the drawings and description of the apparatus that the apparatus is not designed to sustain pressure substantially above atmospheric pressure, especially not greater than 40 psig.

16. Examiner emphasizes that the claim recites, "wherein material and structure of the pressure chamber is such that the chamber is operable to sustain an operating pressure above 40 psig." Cody et al. is not excluded from operating at pressures above 40 psig whether or not the apparatus is used for synthesis of general organic compounds. The claim is directed to the capability of the pressure to sustain a pressure above 40 psig, such that it does not matter if the apparatus is for synthesizing organic compounds and whether or not such synthesis would require pressurization above atmospheric pressure. Examiner points to col. 9, lines 46-50 in which it states that gaskets are used to allow manipulations such as pressurization. This proves that a pressurized gas is being used. Furthermore, the synthesis procedures in the synthesis examples in the Cody et al. use gas flows. Whether or not some of Cody et al.'s synthesis would require pressurization substantially above atmospheric pressure is not the issue. The issue is whether the material and structure of the pressure chamber can sustain an operating pressure of 40 psig. Applicant has not pointed out where in the drawings and description that clearly show that the apparatus is not designed to sustain a pressure substantially above atmospheric pressure.

17. Applicant states that as further evidence that the apparatus of Cody et al. is not designed to withstand pressure substantially above atmospheric pressure, a preferred embodiment uses a piercable septum (gasket) to seal the chamber. Applicant further states that the gasket may be made from a rubber that is puncturable with a needle-like object and reseals following the puncture. Applicant concludes that once the septum is pierced, the chamber will not be able to sustain significant pressures.

18. Examiner notes that the rejection focused on the embodiment of figs. 2, 4, and 5, which did not show a third gasket that is piercable. Nevertheless, as the Applicant points out, the gasket reseals, such that it can sustain pressures above atmospheric pressure.

19. Applicant states that their apparatus is designed to sustain an operating pressure above 40 psig and can be used for gas phase polymerization. Applicant states that the material and structure, including the thickness of the manifold, sealing arrange between manifold and holder block, and fasteners, of Cody et al. does not provide a chamber that is operable to sustain an operating pressure above 40 psig.

20. Examiner maintains that what the apparatus is being used for does not determine whether the apparatus can sustain certain pressures. Examiner has demonstrated through Painter et al., Heiszwolf, and Grunwald et al. that the Plexiglas can withstand high pressures in reactor situations. It does not matter if these reactors are used for different types of synthesis. They prove that the Plexiglas cover material of Cody et al. can withstand or sustain phenomenal pressures, such that the plexiglas cover and aluminum or stainless steel base can cooperate to form a pressure chamber to sustain pressures over 40 psig. These are secondary references to provide evidence that it is well known for Plexiglas covers to form a pressure chamber to withstand such pressures, such that they do not need all the other limitations of the claims since Cody et al. satisfies all other limitations. It is also noted that the pressure limitation is considered a process limitation directed toward intended use, such that if the apparatus is capable of performing such a function, it meets the limitation.

21. Applicant argues that the base of Cody et al. does not include reaction wells formed in an upper surface of the base and extending partially therethrough with the reaction wells having a closed lower end defined by the base.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elizabeth Quan whose telephone number is (571) 272-1261. The examiner can normally be reached on M-F (8:00-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on (571) 272-1267. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Elizabeth Quan
Examiner
Art Unit 1743

eq

Jill Warden
Supervisory Patent Examiner
Technology Center 1700